to 105° for two or three weeks. During several attacks the cervical glands had enlarged and, when personally seen, there was evidence of bronchial gland enlargement. The liver and spleen were not palpable and the blood count was normal. Death occurred two years later from puerperal infection, but, unfortunately, no autopsy was obtained.

As seen above, alternating pyrexia may be a symptom of many very different condititons. Regularly repeated attacks over long periods of time are most suggestive of tuberculous lymphomas, Hodgkin's disease, lymphosarcoma or other varieties of sarcoma. In any recurrent pyrexia, the possibility of disease of deep glands should be remembered. Rarely, as in the case recorded by Rolleston, or in the one here described, the liver may be, clinically, the sole organ affected.

TRUE INTESTINAL DYSPEPSIA.[1]

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By the expression "intestinal dyspepsia" we understand conditions in which the digestive function of the intestinal tract is disturbed: The idea of testing the functions of the intestines in a manner similar to those of the stomach prevailed among clinicians for a long while, but its execution was attended with great difficulties. To Adolf Schmidt[2] belongs the credit of having elaborated a method to that effect. This well-known clinician introduced the test diet, known under his name, for the purpose of examining the feces. By means of this method, Schmidt and Strasburger[3] were enabled to discover a group of cases of intestinal dyspepsia, in which the starch digestion is particularly disturbed. They designated it fermentative dyspepsia.

Schmidt[4] has recently described the occurrence of functional achylia of the pancreas; by this he understands cases in which there is a malassimilation of the food, and a temporary lack of nuclear digestion—assigned by him as characteristic of the pancreatic secretion.

In a former paper[5] I have described similar cases, in which all nutritive substances were poorly digested. Yet I hardly believe it advisable to speak of achylia of the pancreas, because by achylia we understand a complete absence of secretion. The conditions in the bowel are very complicated, depend upon many factors, and it is very difficult to judge which organ is at fault. However interesting the nucleus test may be, I do not think that it is of very great value in the recognition of disease of the pancreas, and I fully agree with Steele[6] when he says: "My clinical experience with the nucleus test does not entirely support Schmidt's claim for the method." I have only recently observed a case of tumor of the liver, with chronic jaundice, in which the nuclei at first were unchanged, but later—shortly before death—disappeared entirely. On the other hand, I have observed a case of achylia gastrica and grave anemia in which the pancreas was not involved, and in which the nuclear digestion was almost entirely absent. Besides, in all the cases of non-disappearance of the nuclei, it is possible that the pancreatic secretion is present, but its action inhibited by the presence of some other noxious substance (HCl, organic acids, etc.). It is, therefore, better to classify these cases under the heading of intestinal dyspepsia.

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[1] Read at a meeting of the American Gastro-enterological Association, at Atlantic City, N. J., June 3, 1907.

[2] The Test Diet in Intestinal Diseases. Translated by Charles D. Aaron, Philadelphia, 1906.

[3] Deut. Arch. f. klin. Med., 1901, lxix, 570.

[4] Functionelle Pankreasachylie, Deut. Arch. f. klin. Med., 1906, lxxxvii, 456.

[5] Further Remarks on the Digestive Bead Test for Ascertaining the Functions of the Digestive Apparatus. Jour. Amer. Med. Assoc., February 2, 1907.

In the application of Schmidt's test-diet there are, however, some difficulties. It is often necessary to wait two to three days for the stool from the test-diet, and frequently the results are not easy to interpret. For these reasons Schmidt's method has not been adopted in general practice.

The bead test is easy to apply, and its results are sharply defined. Through a large number of examinations, which will soon be published, I have become convinced that the digestive functions of the bowel may be well judged by means of this test. There is, therefore, no reason why we should not utilize the test in the study of diseases of the bowel.

It is advisable to distinguish two large groups of intestinal disturbances: (1) Digestive disturbances which concern all three classes of food substances (albuminates, carbohydrates, fat): "dyspepsia intestinalis universalis." (2) Digestive disturbances affecting only certain classes of foodstuffs: "dyspepsia intestinalis partialis." This second group may be subdivided according to the varieties of foods, the digestion of which is disturbed: (*a*) Disturbed digestion of proteids; (*b*) carbohydrates; (*c*) fats; and (*d*) two classes of foods, namely, proteids and carbohydrates, carbohydrates and fats, and proteids and fat. These functional disturbances of the intestinal digestion may exist without appreciable anatomical change of the digestive apparatus, or they may be associated with lesions of the intestine. Occasionally subjective disturbances are found in the intestinal tract, in which neither anatomical nor functional deviations from the normal occur. These may be considered as true nervous intestinal dyspepsia.

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[6] The Nucleus Test in Pancreatic Disease. Univ. Penna. Med. Bull., November, 1906.

In using the bead test, we must not imagine, if we find a substance in the beads undigested, that no digestion whatsoever of such substance may occur in the bowel. That would be wrong, for the same foodstuffs in liquid form may still be well digested. We can only conclude from this test that there is a considerable diminution of the digestive power for these substances.

I should now like to describe a few cases of functional intestinal dyspepsia which belong to both groups. The first two cases belong to group one (dyspepsia intestinalis universalis):

CASE I.—*Achylia Gastrica and Dyspepsia Intestinalis Universalis.* Israel R., aged sixty-two years, has been suffering for several years from a loss of appetite and digestive disturbances. Lately his trouble has increased and he complains of pain shortly after meals. His appetite has entirely disappeared. Patient sleeps poorly and complains a great deal of obstinate constipation. He has lost somewhat in weight.

Examination of the chest reveals normal conditions; in the abdomen, also, nothing abnormal is found. Examination of the stomach contents one hour after a test breakfast shows absence of HCl and rennet and a total acidity of four; very little fluid, and particles of roll scarcely changed. We have to deal here with a marked case of achylia gastrica.

The bead test[7] was given, with the following result: 4 beads are found after twenty-four hours; 1 after forty-eight hours; meat, fat, fish-bone, thymus, potato present; catgut was not found; nuclei in thymus have disappeared. Two weeks later the bead test was repeated and showed the presence of meat, potato, fat, thymus, and fish-bone.

The patient was put on a diet of milk, koumiss, raw eggs, soups, and strained gruels, and pancreon was given tentatively. He felt somewhat better, did not lose in weight, but his troubles did not cease. One and one-half years later he was still in the same condition: poor appetite, disagreeable sensations and constipation; however, he has not lost weight since January, 1906.

CASE II.—*Achylia Gastrica and Dyspepsia Intestinalis Universalis.* October, 1906. E. S. N., aged fifty-two years, complained for two years of digestive disturbances accompanied by severe attacks of diarrhœa and colicky pains. His appetite is moderate. For the last six months he has had constant diarrhœa and has lost about twenty pounds. A sojourn in a German watering-place has not given him any relief. Thoracic organs are normal. In the abdomen atony of the stomach is found. One hour after Ewald's test breakfast, a state of complete achylia is found. The bead test shows after twenty-one hours: thymus, meat, fish-bone, catgut, and half of the potato present. Nuclei and fat have disappeared.

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[7] Archiv f. Verdauungskrankheiten, Heft i, table i, case 17, xiii

The patient was placed upon a diet of milk, koumiss, eggs, and fine gruels, and was given codein with tannigen. He gained slowly in weight and the diarrhœa was checked. In seven weeks he had gained eight pounds. Another examination of the stomach contents, as well as a bead test, was made. The stomach showed complete achylia, and the in bead test thymus, meat, catgut, and potato were found—everything else having disappeared.

The patient is still in about the same condition. He has not lost during treatment, and is still suffering more or less from diarrhœa.

CASE III.—*Dyspepsia Intestinalis Partialis.* Mrs. S., about thirty-two years old, rather corpulent, and with the appearance of good health, has been complaining for about a year. She has a disagreeable taste in her mouth. There is a feeling of pressure and fulness in the entire abdomen. She frequently belches and passes wind. She is always constipated, and must take strong cathartics. Even then the stool is insufficient and of a very offensive odor. The appetite is poor; she suffers from vertigo and tires very quickly. She does not sleep well. Recently she has been losing in weight.

Physical examination reveals nothing abnormal. Examination of the stomach contents is refused. The bead test shows after forty-six hours: thymus, meat, and fish-bone are present; potato, catgut, and nuclei have disappeared; fat bead was lost. Microscopically the stool shows a great number of large muscle fibers and smells very badly.

CASE IV.—*Dyspepsia Intestinalis Partialis.* Mr. M. complains of a feeling of fulness in the stomach and abdomen, much belching, great weakness, and persistent constipation. Examination shows systolic murmur at the apex beat; stomach extends a hand's width below the navel; right kidney is movable in the third degree. The stomach contents, removed one hour after breakfast, show the presence of free HCl, and a total acidity of 80. The diagnosis, therefore, is mitral insufficiency, enteroptosis, and hyperchlorhydria.

Patient was treated according to the usual methods. His general health improved, he gained in weight, but the constipation as well as the disagreeable sensations in the stomach and abdomen remained. The bead test was applied. The bead string passed after twenty-eight hours and showed the presence of thymus, fat, and half of the potato. Catgut, meat, fish-bone, as well as thymus nuclei, had disappeared.

The patient received takadiastase 0.3, three times daily. He at once improved. The sensations in the abdomen disappeared and the stool became nearly normal by the use of mild laxatives. The improvement has been permanent, and patient gained considerably in weight and strength.

CASE V.—*Hyperchlorhydria and Chronic Enteritis.* May 1, 1907. Oscar G., aged thirty-eight years, merchant. Previous history negative. Six years ago he complained of gastralgia, at first over the appendix. Since then he localizes the pains somewhat higher (in the region of the gall-bladder). He took calomel and became worse, and at the same time the pains became more intense. These pains attack him now and again. He cannot breathe deeply when he has them. Between the attacks the patient feels a certain amount of discomfort in his abdomen, about two hours after meals. The bead test shows: beads regained after twenty-four hours—fat, half of the thymus and of the potato present. Nuclei and everything else have disappeared.

Case VI.—May 9, 1907. Mrs. W., aged thirty years, was always well until seven years ago when she was married. She has had two children, and was perfectly well when she was pregnant. Seven years ago she began to have trouble with her digestion. She belches considerably and has a great deal of wind, and her bowels are constipated; they may be normal for awhile, then they become constipated and directly after again loose. Appetite is poor.

Examination shows that the chest organs are normal; the stomach reaches one finger's width below the navel; the right kidney is slightly movable. One hour after test breakfast HCl=O, total acidity=20. The bead test shows: string regained after twenty hours—meat, potato, thymus (nuclei disappeared), are present; everything else has disappeared.

Case VII.—R. T. W., aged thirty-eight years, has been suffering for three years from severe attacks of pain in the upper abdominal region with subsequent vomiting. Between attacks the patient feels fairly well, but is very much constipated.

Examination revealed pronounced atony and ptosis of the stomach; otherwise nothing abnormal.

During an attack of vomiting free HCl and bile were demonstrated in the vomited matter. Ischochymia was not found. A week after the attack, when patient was feeling well, the bead test was used with the following result: after twenty-six hours—fat and potato are present; everything else had disappeared.

Epicrisis. Both cases in group I shows that complete intestinal dyspepsia may exist for a long time without necessarily endangering the life of the patient. In both patients achylia gastrica was present. I do not, however, doubt that occasionally, even in the presence of gastric juice, a complete intestinal diyspepsia may be found. Case II to VII of group II are good examples of various special disturbances of the intestinal functions. Disturbances of carbohydrate digestion seem to be most frequent, and those of meat digestion the rarest. Future clinical observation of numerous cases will determine the subjective signs of these various intestinal dyspepsias, so that from them alone the diagnosis may be conjectured.

Therapeutically we can gather a few valuable points as a result of the testing of the intestinal functions. For instance, in complete intestinal dyspepsia we must put the patient on a liquid or semiliquid diet and administer pancreon and similar medicaments. In partial intestinal dyspepsia we can limit the amount of that variety of food for which the particular disturbance exists. Takadiastase, in doses of 5 grains three times daily, has been a valuable help in cases of amylaceous intestinal dyspepsia, as it seems to have removed the subjective symptoms in several cases of this kind. Pancreon in doses of 5 grains in disturbances of proteid and fat digestion seems to work well, although the results here are not so marked as in the former group.

PAROXYSMAL TACHYCARDIA.

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The following study, based on 9 cases, is an attempt to show that in paroxysmal tachycardia we have to deal, not with a single pathological entity, but with different pathogenic forms.

Paroxysmal tachycardia is characterized by periods of extremely rapid pulse rate, of sudden onset and abrupt termination. It has been extensively studied by A. Hoffmann,[1] who showed that the increased heart rhythm is either double or four times the normal. Mackenzie[2] then showed that in some cases tricuspid insufficiency could be demonstrated during the tachycardia, while the heart action during the interval occurred in the normal auricular rhythm. Recently Schlesinger[3] has directed attention to the relation of paroxysmal tachycardia to pathological changes of the central nervous system.

The attacks are characterized by the sudden onset of tachycardia, its equally sudden termination, the absence, in the majority of cases, of pronounced subjective symptoms, except at the beginning and the end of the paroxysm. In 2 cases the attacks began with a feeling of chest-constriction analogous to the onset of a mild angina; in one other, choking and air-hunger were complained of; in the remaining cases distressing palpitation was the only sensation noted. Similar sensory disturbances, even more disturbing, marked the end of the tachycardia. The duration of the attacks was variable; the rapid pulse rate lasted in 1 case but ten to fifteen minutes at a time, while the longest attack lasted for five days.

From a study of the cases I am led to divide them into four etiological groups: (1) Cases of paroxysmal tachycardia occurring in patients with previously damaged heart; (2) cases of paroxysmal

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[1] Ztschr. f. klin. Med., vol. 53.

[2] Study of the Pulse.

[3] Sammlung klin. Vorträge, 433.